CLAIMS

1. A method for reducing the average size of biologically active compound particles or agglomerates suspended in a fluid by flowing one or more times said fluid having biologically active compound particles or agglomerates suspended therein through one or more magnetic fields to reduce the average size of a substantial portion of the biologically active compound particles or agglomerates by at least 25%, preferably at least 50%, more preferably at least 80%.
2. A method according to claim 1, wherein the strength of each said magnetic field is at least about 2,000 gauss.
3. A method according to claim 1 or claim 2, wherein the average size of said biologically active compound agglomerates before performing said method is in a range from about 10 µm to about 100 µm.
4. A method according to any of claims 1 to 3, wherein the average size of a substantial portion of said biologically active compound agglomerates after performing said method is reduced to a range from about 0.45 µm to 5 µm.
5. A method according to any of claims 1 to 4, wherein said substantial portion is at least 50% by weight of the suspended agglomerates.
6. A method according to any of claims 1 to 5, wherein the average particle size of said biologically active compound particles before performing said method is in a range from about 0.5 µm to about 10 µm.
7. A method according to any of claims 1 to 6, wherein the average particle size of said biologically active compound particles after performing is reduced to a range from about 0.5 nm to about 500 nm.
8. A method according to any of claims 1 to 7, wherein said fluid is a liquid.
9. A method according to any of claims 1 to 8, wherein said fluid is water.

10. A method according to any of claims 1 to 8, wherein said fluid is an organic solvent or a combination thereof with water.

11. A method according to any of claims 1 to 10, wherein said biologically active compound particles or agglomerates are suspended in said fluid in the form of a slurry and the concentration of said biologically active compound particles or agglomerates in said fluid is at least two times the solubility limit of said biologically active compound in said fluid under the physical (temperature, pressure) and chemical (pH) conditions prevailing while flowing said slurry through said magnetic field.

12. A method according to any of claims 1 to 11, wherein said fluid is a liquid and flowing said liquid through said magnetic field is effected at a temperature between the freezing temperature and the boiling temperature of said fluid under the pressure prevailing while flowing said fluid through said magnetic field.

13. A method according to any of claims 1 to 12, wherein said fluid is water and flowing said liquid through said one or more magnetic fields is effected at a temperature between about 2°C and 95°C under atmospheric pressure.

14. A method according to any of claims 1 to 7, wherein said fluid is a gas or a supercritical fluid.

15. A method according to any of claims 1 to 14, wherein said fluid includes one or more stabilizing agents.

16. A method according to claim 15 wherein the stabilizing agent is a surfactant, a polymer, a silicate, a hydrophilic agent or a combination thereof.

17. A method according to claims 15 or 16, wherein said stabilizing agent comprises a surfactant in an amount such as to produce surfactant-capped nanoparticles.

18. A method according to any of claims 1 to 17, wherein said fluid is re-circulated two or more times through said one or more magnetic fields.

19. A method according to any of claims 1 to 18, wherein the linear flow rate of said fluid through each said magnetic field is between 0.25 and 25 m/s.

20. A method according to any of claims 1 to 19, wherein the residence time of said fluid through each said magnetic field is between 60 microseconds and 10 seconds.

21. A method according to any of claims 1 to 20, wherein the biologically active compound is in a crystalline form.

22. A method according to any of claims 1 to 20, wherein the biologically active compound is in an amorphous form.

23. A method according to any of claims 1 to 22, wherein the biologically active compound is a drug classifiable as Class II or Class IV of the Biopharmaceutical Classification System.

24. A method according to any of claims 1 to 23, wherein the biologically active compound is a drug having a water-solubility below about 2 mg/ml.

25. A method according to any of claims 1 to 24, wherein the biologically active compound is a drug having a water-solubility below about 5 µg/ml.

26. A method according to any of claims 1 to 25, wherein the biologically active compound is a cosmetic agent, a diagnostic agent, a herbicide, an insecticide, a biocide or a fungicide.

27. A process for manufacturing a biologically active compound formulation, the said process involving the use of biologically active compound particles or agglomerates, comprising a step of reducing by at least 25%, the average size of a substantial portion of said biologically active compound particles or agglomerates, wherein said step includes a method according to any of claims 1 to 26.

28. A process according to claim 27, wherein said process further comprises one or more post-processing steps performed following the size reducing step.

29. A process according to claim 27 or claim 28, wherein said post-processing step is a drying step for substantially removing the fluid in which the biologically active compound particles or agglomerates are suspended during the size reducing step.

30. A process according to claim 29, wherein said drying step comprises freeze drying.

31. A process acoording to claim 29, wherein said drying step comprises spray drying.

32. A process according to any of the claims 27 to 31, wherein said post-processing step is a step of mixing an adjuvant together with the optionally dried particles or agglomerates with reduced size.

33. A population of biologically active compound particles obtained by a method according to any of claims 1 to 26 or a process according to any of claims 27 to 32.